IN THE CLAIMS

1. (Previously Presented) A method of decreasing the concentration of fuel in a fuel cell system comprising the steps of:

introducing a carbonaceous fuel to a catalyst in the presence of oxygen;

reacting at least a portion of said fuel with said oxygen on said catalyst to produce water, carbon dioxide and heat; and using at least a portion of said water to dilute said fuel.

2. (Withdrawn) A water generator for a fuel cell system comprising:

a housing;

a substrate;

means for introducing oxygen into said housing;

means for introducing fuel or fuel solution into said housing;

means for reacting said fuel or fuel solution with said oxygen to produce carbon dioxide, water and heat;

means for mixing said water with said fuel to form dilute fuel; and

means for removing said water from said water generator.

3. (Withdrawn) A water generating assembly, comprising:

a source of carbonaceous fuel;

a source of oxygen;

a catalyst;

means for introducing carbonaceous fuel from said source of carbonaceous fuel and means for introducing oxygen from said source of oxygen in the presence of said catalyst to oxidize the fuel, producing carbon dioxide, water and heat.

4. (Withdrawn) The water generating assembly as defined in claim 3 further comprising a control system for controlling the amount and introduction of at least one of fuel and oxygen to said catalyst.

5. (Withdrawn) The water generating assembly as defined in claim 3 wherein said catalyst is disposed on an element, which may include a substrate.

6. (Withdrawn) The water generating assembly as defined in claim 5 wherein said element is a substrate.

7. (Withdrawn) The water generating assembly as defined in claim 3 wherein said catalyst is disposed at one of the following: within a chamber, in a chamber, and on an aspect of a chamber.

8. (Withdrawn) The water generating assembly as defined in claim 3 used with an associated direct oxidation fuel cell wherein said catalyst is disposed within the anode chamber of said fuel cell.

9. (Withdrawn) The water generating assembly as defined in claim 3 used with an associated direct oxidation fuel cell wherein said catalyst is disposed within the cathode chamber of said fuel cell.

10. (Withdrawn) The water generating assembly as defined in claim 3 wherein said carbonaceous fuel includes methanol.

11. (Withdrawn) The water generating assembly as defined in claim 6, wherein said substrate is a tubular substrate.

12. (Withdrawn) The water generating assembly as defined in claim 11 wherein said tubular substrate includes fluted walls.

13. (Withdrawn) The water generating assembly as defined in claim 11, wherein said catalyst is disposed on an exterior aspect of said tubular substrate, and said tubular substrate is coupled with said source of fuel in such a manner that fuel is introduced into an interior aspect of said tubular substrate whereby some of said fuel passes from the interior aspect of said tubular substrate to said catalyst on the exterior aspect and the fuel reacts with oxygen, producing carbon dioxide, water and heat.

14. (Withdrawn) The water generating assembly as defined in claim 13, wherein said catalyst is applied to at least a first portion of said tubular substrate and at least one second portion of the exterior aspect is exposed and is catalyst free such that water produced on said exterior aspect passes back into the interior aspect of said tubular substrate.

15. (Withdrawn) The water generating assembly as defined in claim 13, wherein said exterior aspect of said tubular substrate is enclosed with a liquid-impermeable, gas-permeable material forming an enclosure defining a space between the exterior aspect and the enclosure as a water generation and collection area.

16. (Withdrawn) The water generating assembly as defined in claim 15, wherein said enclosure provides either a pressure or a concentration gradient across the tubular substrate, and where carbon dioxide produced by oxidation of said fuel is released from the enclosure through the liquid-impermeable, gas-permeable material enclosing said tubular substrate.

17. (Withdrawn) The water generating assembly as defined in claim 11, wherein said tubular substrate has said catalyst disposed on an interior aspect of said tubular substrate that is coupled with said source of fuel in such a manner that fuel and oxygen are introduced to the interior aspect of said tubular substrate whereby carbon dioxide, water and heat are produced on the interior aspect of said tubular substrate.

18. (Withdrawn) The water generating assembly as defined in claim 17 wherein said tubular substrate is comprised of a gas-permeable, liquid-impermeable material such that water, heat and carbon dioxide are generated at the interior aspect of said tubular substrate and carbon dioxide generated passes out through walls of said tubular substrate.

19. (Withdrawn) The water generating assembly as defined in claim 18, wherein oxygen is introduced to the catalyst through said tubular substrate.

20. (Withdrawn) The water generating assembly as defined in claim 17, wherein at least one portion of said tubular substrate is left uncatalyzed so that excess air and carbon dioxide may pass through to an exterior aspect of said tubular substrate resulting in liquid water being collected, substantially gas-free on an interior aspect of the gas-permeable, liquid-impermeable material.

21. (Previously Presented) A direct oxidation fuel cell system, comprising:

(A) a direct oxidation fuel cell having

(i) a catalyzed membrane electrolyte, having an anode aspect and a cathode aspect;

(ii) a fuel cell housing enclosing said fuel cell with an anode chamber being defined between said anode aspect of the catalyzed membrane electrolyte and a first exterior portion of said cell housing, and a cathode chamber being defined between said cathode aspect of the catalyzed membrane and a second exterior portion of said fuel cell housing;

(B) a fuel source coupled to said fuel cell that delivers a carbonaceous fuel substance to said fuel cell;

(C) a source of oxygen, coupled to said fuel cell;

(D) a water generating assembly in communicating relationship with said fuel source, said source of oxygen, and said fuel cell;

(E) a controller in communicating relationship with said water generating assembly and said fuel cell that controls the introduction of fuel, oxygen and water selectively into said water generating assembly to generate water; and

(F) a load detachably coupled across said fuel cell such that when said fuel cell is generating electricity, said load is coupled across said fuel cell, and power produced by said fuel cell is delivered to said load.

22. (Previously Presented) The direct oxidation fuel cell system as defined in claim 21 wherein said water generating assembly is disposed between said fuel source and said anode chamber of said direct oxidation fuel cell and further includes a control system for controlling the amount and introduction of fuel and oxygen to said water generating assembly and to said fuel cell.

23. (Previously Presented) The direct oxidation fuel cell system as defined in claim 22 wherein said control system includes one of the following: a valve, or a valve assembly that includes means for controlling the opening and closing of one or more valves in the valve assembly.

24. (Previously Presented) The direct oxidation fuel cell system as defined in claim 21 wherein said carbonaceous fuel substance includes methanol.

25. (Previously Presented) The direct oxidation fuel cell system as defined in claim 21 further comprising said water generating assembly being coupled to said anode chamber of said direct oxidation fuel cell in such a manner that water that is produced may be selectively added to said anode chamber to control the concentration of fuel.

26. (Previously Presented) The direct oxidation fuel cell system as defined in claim 25 wherein said water may be delivered to said anode chamber by the operation of one of the following: a valve, or a valve assembly that includes means for controlling the opening and closing of one or more valves in the valve assembly.

27. (Previously Presented) The direct oxidation fuel cell system as defined in claim 21 further comprising said water generating assembly being coupled to said cathode chamber of said direct oxidation fuel cell in such a manner that oxygen may be selectively introduced into said cathode chamber, and when combined with fuel in the presence of the cathode aspect of the catalyzed membrane, produces water.

28. (Previously Presented) The direct oxidation fuel cell system as defined in claim 27 wherein said water may be delivered to said cathode chamber by the operation of one of the following: a valve, or a valve assembly that includes means for controlling the opening and closing of one or more valves in the valve assembly.

29. (Previously Presented) The direct oxidation fuel cell system as defined in claim 21 wherein said water generating assembly is in fluid communication with said fuel source and said fuel cell.

30. (Previously Presented) The direct oxidation fuel cell system as defined in claim 29 wherein said fluid communication includes a first conduit connected between said water generating assembly and said fuel source, and a second conduit connected between said fuel source and said direct oxidation fuel cell.

31. (Previously Presented) The direct oxidation fuel cell system as defined in claim 30 further comprising at least one of the following: a first fluid flow controller for controlling the introduction of fuel through said first conduit to said water generating assembly, and a second fluid flow controller for controlling the fluid flow through said second conduit from said water generating assembly to said direct oxidation fuel cell.

32. (Previously Presented) The direct oxidation fuel cell system as defined in claim 31 wherein said at least one of said first and second fluid flow controllers includes at least one of the following: a valve, and a valve assembly that includes means for controlling the opening and closing of one or more valves in the valve assembly.

33. (Previously Presented) The direct oxidation fuel cell system as defined in claim 29 wherein said fluid communication includes a first conduit connected between said water generating assembly and said fuel source, and a second conduit connected between said water generating assembly and said direct oxidation fuel cell, and a third conduit connected between said fuel source and said direct oxidation fuel cell.

34. (Previously Presented) The direct oxidation fuel cell system as defined in claim 33 further comprising at least one fluid flow controller for controlling the introduction of fluids into or through one of said first, second and third conduits.

35. (Previously Presented) The direct oxidation fuel cell system as defined in claim 34 wherein said fluid flow controller includes one of the following: a valve, or a valve assembly that includes means for controlling the opening and closing of one or more valves in the valve assembly.

36. (Previously Presented) The direct oxidation fuel cell system as defined in claim 21 wherein said water generating assembly is a substrate that has a catalyzed surface and said substrate is comprised of a substantially fuel-permeable, carbon dioxide impermeable material such that fuel can permeate through, but carbon dioxide is trapped and is thus directed out through associated outlet ports in said fuel cell, while generated water remains in said anode chamber, or can be directed as desired in said fuel cell system.

37. (Previously Presented) The direct oxidation fuel cell system as defined in claim 21, wherein said water generating assembly is a substrate that has a catalyzed surface and said substrate is comprised of a substantially gas-permeable, liquid impermeable material, such that gases can travel through said substrate, but water cannot travel through said substrate.

38. (Previously Presented) A direct oxidation fuel cell and water generating system, comprising:

a housing;

a source of fuel in fluid communication with said housing;

a source of oxygen in fluid communication with said housing;

a membrane electrode assembly having a catalyzed membrane electrolyte, with an anode aspect and a cathode aspect, disposed within said housing, an anode chamber being defined between said anode aspect of the catalyzed membrane electrolyte and a first exterior portion of said housing, and a cathode chamber being defined between said cathode aspect of the catalyzed membrane electrolyte and a second exterior portion of said housing; and

a controller for adjusting the introduction of fuel from said fuel source into said housing and for adjusting the introduction of oxygen from said oxygen source into said housing to determine whether said system functions to generate electricity or to generate water.

39. (Previously Presented) The system as defined in claim 38 further comprising:

a load detachably coupled across said fuel cell which load receives power from said fuel cell in an electricity generating mode.

40. (Previously Presented) The system as defined in claim 38 further comprising:.

an adjustable oxygen port in said housing that can be closed to prevent oxygen from entering said housing.

41. (Previously Presented) The system as defined in claim 40 further comprising a fuel inlet port in fluid communication with the anode chamber of said fuel cell, and when said controller operates to introduce fuel and oxygen into said anode chamber, the system functions in a water generating mode at said anode chamber.

42. (Previously Presented) The system as defined in claim 40 wherein said adjustable oxygen port is closed to prevent oxygen from entering said anode chamber , and said controller operates to introduce fuel into the anode chamber of the fuel cell, a load is connected across the fuel cell such that the system functions in an electricity generating mode.

43. (Previously Presented) The system as defined in claim 40 wherein said adjustable oxygen port is closed to prevent oxygen from entering said anode chamber, and said controller operates to introduce fuel into the anode chamber of the fuel cell, a load is uncoupled and not connected across the fuel cell such that there is fuel crossover and the system functions in a water generating mode at the cathode chamber.

44. (Previously Presented) The system as defined in claim 43 further comprising means for periodically varying the load attached to the system in order to periodically induce fuel crossover, resulting in the generation of water.

45. (Previously Presented) The system as in claim 38 wherein said system functions in a water generating mode and is coupled to another fuel cell to deliver water to the anode of the fuel cell.

46. (Previously Presented) The method as defined in claim 1 including the further step of controlling the amount of fuel that is delivered to said catalyst.

47. (Previously Presented) The method as defined in claim 1 including the further step of controlling the amount of oxygen that is delivered to said catalyst.

48. (Previously Presented) The method as defined in claim 1 including the further step of:

disposing a water generating assembly including a catalyst in said direct oxidation fuel cell system between said source of fuel and said fuel cell, and providing a control system that controls the amount and introduction of fuel, and oxygen to said water generating assembly and said fuel cell.

49. (Previously Presented) The method as defined in claim 48 including the further step of operating said control system such that said fuel cell generates electricity.

50. (Previously Presented) The method as defined in claim 48 including the further step of utilizing water generated to adjust the concentration of methanol in said fuel cell.

51. (Previously Presented) A method of employing a direct oxidation fuel cell system as a combined power generator, and water generator including the steps of:

(A) providing a housing;

(B) providing a source of fuel in fluid communication with said housing;

(C) providing a source of oxygen in fluid communications with said housing;

(D) providing a membrane electrode assembly having a catalyzed membrane electrolyte, with an anode aspect and a cathode aspect, disposed within said housing, an anode chamber being defined between said anode aspect of the catalyzed membrane electrolyte and a first exterior portion of said housing, and a cathode chamber being defined between said cathode aspect of the catalyzed membrane electrolyte and a second exterior portion of said housing;

(E) determining whether said system functions to generate electricity or to generate water; and

(F) controlling the introduction of fuel and oxygen into said housing as needed to cause said system to function to either generate electricity or to generate water.

52. (Previously Presented) The method of employing a direct oxidation fuel cell system as a combined power generator, and water generator as defined in claim 51 including the further step of: introducing fuel and oxygen into said anode chamber to oxidize said fuel and to produce water, but no electricity.

53. (Previously Presented) The method of employing a direct oxidation fuel cell system as a combined power generator, and water generator as defined in claim 51 including the further step of:

adjusting the introduction of oxygen in such a manner that oxygen is not introduced into the anode chamber;

adjusting the introduction of fuel into said anode chamber such that fuel is added to said anode chamber; and

connecting a load across said membrane electrode assembly such that power produced is delivered to said load.

54. (Previously Presented) The method of employing a direct oxidation fuel cell system as a combined power generator, and water generator as defined in claim 51 including the further step of:

adjusting the introduction of oxygen in such a manner that oxygen is not introduced into the anode chamber;

adjusting the introduction of fuel into said anode chamber, while not connecting a load across said membrane electrode assembly, such that fuel is added to said anode chamber to induce fuel cross over and to generate water in said cathode chamber.